CLAIM AMENDMENTS

Please cancel claims 3, 23, 29, and 50-56, and amend the remaining claims as follows. A complete listing of claims and their status in the above-identified application is shown below.

1. (Currently Amended) In a process for coating an electroconductive substrate comprising the following steps:

(a) electrophoretically depositing on the substrate a curable electrodepositable coating composition to form a coated substrate having an electrodeposited coating over at least a portion thereof ~~of the substrate~~,

the electrodepositable coating composition comprising a resinous phase dispersed in an aqueous medium, said resinous phase comprising:

(1) one or more ungelled active hydrogen-containing, cationic amine salt group-containing resins which are electrodepositable on a cathode, and

(2) one or more at least partially blocked aliphatic polyisocyanate curing agents;

(b) heating the coated substrate to a temperature and for a time sufficient to cure the electrodeposited coating on the substrate;

(c) applying directly to the cured electrodeposited coating one or more pigment-containing coating compositions and/or one or more pigment-free coating compositions to form a top coat over at least a portion of the cured electrodeposited coating;

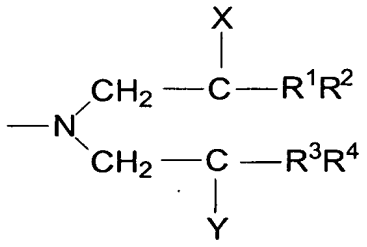
(d) heating the coated substrate of step (c) to a temperature and for a time sufficient to cure the top coat, the cured top coat having at least 0.1 percent light transmission measured at 400 nanometers,

the improvement comprising the presence in the curable electrodepositable coating composition of one or more cationic amine salt group-containing resins wherein the amine salt groups are derived from pendant and/or terminal amino groups having the following structure ~~structures (I) or~~ (II):

~~(I)~~

~~—NHR~~

~~or~~



(II)

wherein ~~the R groups represent H or C_1 to C_{18} alkyl;~~

R^1, R^2, R^3, and R^4 are the same or different, and each independently represents H or C_1 to C_4 alkyl; and

X and Y can be the same or different, and each independently represents a hydroxyl group or an amino group; and wherein the coated substrate formed in step (a) is heated in an atmosphere having 5 parts per million or less of NO_x to a temperature and for a time sufficient to cure the electrodeposited coating on the substrate.

2. (Original) The process of claim 1, wherein the cured top coat has from 0.1 to 50 percent light transmission measured at 400 nanometers.

3. (Cancelled)

4. (Original) The process of claim 1, wherein at least three electron-withdrawing groups are bonded in the beta-position relative to substantially all of the nitrogen atoms

5. (Original) The process of claim 1, wherein the electron-withdrawing groups are selected from an ester group, a urea group, a urethane group, and combinations thereof.

6. (Original) The process of claim 1, wherein the active hydrogen-containing, cationic amine salt group-containing resin (1) comprises a polymer selected from at least one of a polyepoxide polymer, an acrylic polymer, a polyurethane polymer, a polyester polymer, mixtures thereof and copolymers thereof.

7. (Original) The process of claim 1, wherein the resin (1) comprises a polyepoxide polymer.

8. (Original) The process of claim 1, wherein the resin (1) comprises a polyepoxide polymer and an acrylic polymer.

9. (Original) The process of claim 8, wherein the polyepoxide polymer is present in the electrodepositable coating composition in an amount ranging from 10 to 90 weight percent, based on total weight of resin solids present in the electrodepositable coating composition.

10. (Currently Amended) The process of claim 1, wherein the resin (1) comprises cationic amine salt groups derived from at least one compound selected from ~~ammonia, methylamine,~~ diethanolamine, diisopropanolamine, N-hydroxyethyl ethylene diamine, diethylenetriamine, and mixtures thereof.

11. (Original) The process of claim 1, wherein the resin (1) is present in the electrodepositable coating composition in an amount ranging from 20 to 80 weight percent, based on total combined weight of resin solids of the resin (1) and the curing agent (2) present in the electrodepositable coating composition.

12. (Original) The process of claim 1, wherein the curing agent (2) comprises at least one at least partially blocked polyisocyanate selected from 1,6-hexamethylene diisocyanate, isophorone diisocyanate, bis-

(isocyanatocyclohexyl)methane, polymeric 1,6-hexamethylene diisocyanate, trimerized isophorone diisocyanate, norbornane diisocyanate and mixtures thereof.

13. (Original) The process of claim 12, wherein the curing agent (2) comprises one or more fully blocked polyisocyanates.

14. (Original) The process of claim 12, wherein the curing agent (2) comprises a fully blocked polyisocyanate selected from a polymeric 1,6- hexamethylene diisocyanate, isophorone diisocyanate, and mixtures thereof.

15. (Original) The process of claim 1, wherein the polyisocyanate curing agent (2) is at least partially blocked with at least one blocking agent selected from a 1,2-alkane diol, a 1,3-alkane diol, a benzylic alcohol, an allylic alcohol, caprolactam, a dialkylamine, and mixtures thereof.

16. (Original) The process of claim 15, wherein the polyisocyanate curing agent (2) is at least partially blocked with at least one 1,2-alkane diol having three or more carbon atoms.

17. (Original) The process of claim 15, wherein the polyisocyanate curing agent (2) is at least partially blocked with at least one blocking agent selected from a 1,2-alkane diol having more than three carbon atoms, and a benzylic alcohol, and mixtures thereof.

18. (Original) The process of claim 17, wherein the polyisocyanate curing agent (2) is at least partially blocked with 1,2-butanediol, benzyl alcohol, and mixtures thereof.

19. (Original) The process of claim 1, wherein the polyisocyanate curing agent (2) is present in the electrodepositable coating composition in an amount ranging from 20 to 80 weight percent, based on total combined weight of resin solids of the resin (1) and the curing agent (2) present in the electrodepositable coating composition.

20. (Original) The process of claim 1, wherein the coated substrate of step (a) is heated to a temperature ranging from 250° to 400°F (121.1° to 204.4°C).

21. (Original) The process of claim 1, wherein the electrodepositable coating composition is free of lead compounds.

22. (Original) The process of claim 1, wherein the coated substrate of step (a) is heated to a temperature of 360°F (180°C) or less for a time sufficient to cure the electrodeposited coating on the substrate.

23. (Cancelled)

24. (Currently Amended) The process of claim1 ~~23~~, wherein the coated substrate of step (a) is heated in an atmosphere having 1 part per million or less of NO_x to a temperature and for a time sufficient to cure the electrodeposited coating on the substrate

25. (Original) The process of claim 1, wherein the electrodepositable coating composition further comprises at least one source of a metal selected from rare earth metals, yttrium, and mixtures thereof, present in an amount of 0.005 to 5 percent by weight metal, based on total weight of resin solids present in the composition.

26. (Original) A process for forming photodegradation-resistant multi-layer coating on an electroconductive substrate comprising the following steps:

(a) electrophoretically depositing on the substrate a curable electrodepositable coating composition to form an electrodeposited coating over at least a portion of the substrate,

the electrodepositable coating composition comprising a resinous phase dispersed in an aqueous medium, said resinous phase comprising:

(1) one or more ungelled cationic polymers which are electrodepositable on a cathode, and

(2) one or more at least partially blocked aliphatic polyisocyanate curing agents;

(b) heating the coated substrate in an atmosphere having 5 parts per million or less of NOx to a temperature and for a time sufficient to cure the electrodeposited coating on the substrate;

(c) applying directly to the cured electrodeposited coating one or more pigment-containing coating compositions and/or one or more pigment-free coating compositions to form a top coat over at least a portion of the cured electrodeposited coating; and

(d) heating the coated substrate of step (c) to a temperature and for a time sufficient to cure the top coat, the cured top coat having at least 0.1 percent light transmission measured at 400 nanometers.

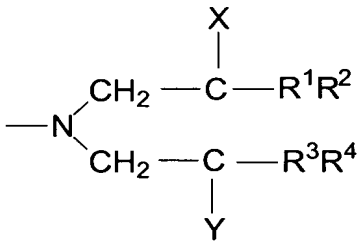
27. (Original) The process of claim 26, wherein the cationic polymer comprises cationic amine salt groups.

28. (Currently Amended) The process of claim 27, wherein the cationic amine salt groups are derived from pendant and/or terminal groups having the structure ~~(I) or~~ (II):

~~(I)~~

~~-NHR~~

~~or~~



(II)

wherein ~~the R groups represent H or C_1 to C_{18} alkyl;~~

R^1, R^2, R^3, and R^4 are the same or different, and each independently represents H or C_1 to C_4 alkyl; and

X and Y can be the same or different, and each independently represents a hydroxyl group or an amino group.

29. (Cancelled)

30. (Currently Amended) The process of claim 26 ~~29~~, wherein the electron-withdrawing groups are selected from an ester group, a urea group, a urethane group, and combinations thereof.

31. (Original) The process of claim 26, wherein the top coat has from 0.1 to 50 percent light transmission as measured at 400 nanometers.

32. (Original) The process of claim 26 wherein the polymer (1) is selected from at least one of a polyepoxide polymer, an acrylic polymer, a polyurethane polymer, a polyester polymer, copolymers thereof, and mixtures thereof.

33. (Original) The process of claim 32, wherein the polymer (1) comprises a polyepoxide polymer.

34. (Original) The process of claim 32, wherein the polymer (1) comprises a polyepoxide polymer, an acrylic polymer, and mixtures thereof.

35. (Original) The process of claim 34, wherein the polyepoxide polymer is present in the electrodepositable coating composition in an amount ranging from 10 to 90 weight percent, based on total weight of resin solids present in the electrodepositable coating composition.

36. (Currently Amended) The process of claim 26, wherein the polymer (1) comprises cationic amine salt groups derived from at least one compound selected from ~~ammonia, methylamine,~~ diethanolamine, diisopropanolamine, N-hydroxyethyl ethylenediamine, diethylenetriamine, and mixtures thereof.

37. (Original) The process of claim 26, wherein the polymer (1) is present in the electrodepositable coating composition in an amount ranging from 20 to 80

weight percent, based on total combined weight of resin solids of the resin (1) and the curing agent (2) present in the electrodepositable coating composition.

38. (Original) The process of claim 26, wherein the curing agent (2) is selected from 1,6-hexamethylene diisocyanate, isophorone diisocyanate, bis-(isocyanatocyclohexyl)methane, polymeric 1,6-hexamethylene diisocyanate, trimerized isophorone diisocyanate, norbornane diisocyanate, and mixtures thereof.

39. (Original) The process of claim 26, wherein the curing agent (2) comprises one or more fully blocked polyisocyanates.

40. (Original) The process of claim 39, wherein the curing agent (2) comprises at least one fully blocked polyisocyanate selected from polymeric 1,6-hexamethylene diisocyanate, isophorone diisocyanate, and mixtures thereof.

41. (Original) The process of claim 26, wherein the polyisocyanate curing agent (2) is at least partially blocked with at least one blocking agent selected from a 1,2-alkane diol, a 1,3-alkane diol, a benzylic alcohol, an allylic alcohol, caprolactam, a dialkylamine, and mixtures thereof.

42. (Original) The process of claim 41, wherein the polyisocyanate curing agent (2) is at least partially blocked with at least one 1,2-alkane diol having three or more carbon atoms.

43. (Original) The process of claim 41, wherein the polyisocyanate curing agent (2) is at least partially blocked with at least one blocking agent selected from a 1,2-alkane diol having more than three carbon atoms, a benzylic alcohol, and mixtures thereof.

44. (Original) The process of claim 43, wherein the polyisocyanate curing agent (2) is at least partially blocked with a blocking agent selected from 1,2-butanediol, benzyl alcohol, and mixtures thereof.

45. (Original) The process of claim 26, wherein the polyisocyanate curing agent (2) is present in the electrodepositable coating composition in an amount ranging from 20 to 80 weight percent, based on total combined weight of resin solids of the resin (1) and the curing agent (2) present in the electrodepositable coating composition.

46. (Original) The process of claim 26, wherein the coated substrate of step (a) is heated to a temperature ranging from 250° to 400°F (121.1° to 204.4°C).

47. (Original) The process of claim 46, wherein the coated substrate of step (a) is heated to a temperature of 360°F (180°C) or less for a time sufficient to cure the electrodeposited coating on the substrate.

48. (Original) The process of claim 26, wherein the electrodepositable coating composition is free of lead compounds.

49. (Original) The process of claim 26, wherein the electrodepositable coating composition further comprises at least one source of metal selected from rare earth metals, yttrium, and mixtures thereof, present in an amount of 0.005 to 5 percent by weight metal, based on the total weight of resin solids in the electrodepositable composition.

50-56. (Cancelled)

57-111. (Withdrawn)

112. (Withdrawn, Currently Amended) A process for coating a metal substrate comprising the following steps:

(a) electrophoretically depositing on the substrate a curable, electrodepositable coating composition essentially free of heavy metals and comprising the following components:

(1) an active hydrogen-containing, cationic salt group-containing polymer electrodepositable on a cathode and derived from a polymer selected from the group

consisting of an acrylic polymer, a polyester polymer, a polyurethane polymer, and mixtures thereof;

(2) an at least partially blocked polyisocyanate curing agent and

(3) at least one source of a metal selected from rare earth metals, yttrium, and mixtures thereof, present in an amount of 0.005 to 5 percent by weight metal, based on the total weight of polymer solids in the electrodepositable coating composition.,

(b) heating the substrate to a temperature of 250 to 400°F (121.1 to 204.4°C) for a time sufficient to effect cure of the electrodepositable composition, in an atmosphere having 5 parts per million or less of NO_x.

113. (Withdrawn) The process of claim 112, wherein the metal of component (3) is yttrium.

114. (Withdrawn, Currently Amended) A process for coating a metal substrate comprising the following steps:

(a) optionally forming a metal object from the substrate;

(b) optionally cleaning the substrate with an alkaline and/or acidic cleaner;

(c) optionally pretreating the substrate with a solution substantially free of heavy metals and selected from the group consisting of a metal phosphate solution, an aqueous solution containing at least one Group IIIB or IVB metal, an organophosphate solution, an organophosphonate solution, and combinations thereof;

(d) optionally rinsing the substrate with water;

(e) electrophoretically depositing on the substrate a curable, electrodepositable coating composition free of heavy metals and comprising:

(1) an active hydrogen-containing, cationic salt group-containing polymer electrodepositable on a cathode and derived from a polymer selected from the group consisting of acrylic, polyester, polyurethane, and mixtures thereof;

(2) an at least partially capped polyisocyanate curing agent essentially free of isocyanato groups or capped isocyanato groups to which are bonded aromatic groups; and

(3) at least one source of a metal selected from rare earth metals, yttrium, and mixtures thereof, present in an amount of 0.005 to 5 percent by weight metal,

based on the total weight of polymer solids in the electrodepositable coating composition, wherein the polymer is essentially free of aliphatic carbon atoms to which are bonded more than one aromatic group; and

(f) heating the substrate to a temperature of 250 to 400°F (121.1 to 204.4°C) for a time sufficient to effect cure of the electrodepositable composition, in an atmosphere having 5 parts per million or less of NO_x.